

COMPRESSED STAINLESS STEEL BURNER

BACKGROUND OF THE INVENTION

1. Field of Invention

This invention relates generally to a compressed stainless steel burner that can be used for a BBQ grill. Two stainless steel plates are compressed together to form a burner with some dividers inside of it to guide the gas flow evenly to its ports.

2. Description of the Prior Art

The burners of a BBQ grill play a key role in grill's performance. The most common burners are made of cast iron but some high end grills use stainless steel burners. The cast iron burners are cheaper with simple shape but it is easy to get rust. In order to have a longer life and better burning efficiency some special stainless steel burners are developed for advanced grills. Stainless steel burners are getting more popular now since high quality stainless steel BBQ grill are accepted by the consumers extraordinarily.

SUMMARY OF THE PRESENT INVENTION

In accordance with the present invention, two stainless steel plates are compressed and bound together with dividers in between to form a burner. There are saw-tooth on each edge of the stainless steel plates and the top plate is wider than the bottom plate. The saw-tooth of the top plate will be fold to wrap the saw-tooth of the bottom plate during compressing process and bind the two plates as one unit. The vales between each tooth forms the port of the burner after compressed. The size of the ports can be adjusted by change the vale size of the saw-tooth. The thickness of the stainless steel plates can

1 be thicker than the existed stainless steel tube burner because the ports of the
2 tube burners are formed through drilling and the thickness is limited due to
3 drilling capability. The ports of the current invented burner are formed
4 through compressing and folding therefore the thickness can be as thicker as
5 required. Venturi tube is designed at gas entrance of the burner to facilitate
6 air entry from the surround field.

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8 BRIEF DESCRIPTION OF THE DRAWINGS

9 Fig. 1 is a perspective view of a compressed stainless steel burner.

10 Fig. 2 is the top view, front view and side view of the stainless steel
11 burner.

12 Fig. 3 is a top view of the top stainless steel plate before compressed.

13 Fig. 4 is a top view of the bottom stainless steel plate before compressed.

14 Fig. 5 is a top view of the top divider plate.

15 Fig. 6 is a top view of the bottom divider plate.

16 Fig. 7 is a side view of both divider plates.

17 Fig. 8 is a fragmentary exploded perspective view of the compressed
18 stainless steel burner.

19 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

20 Referring to Fig. 8 top stainless steel plate **1**, two stainless steel dividers
21 **2**, bottom stainless steel plate **3**, round cap **4** comprise a burner after
22 compressed and folded. Referring to Fig. 3 and 4 both top and bottom plates
23 are pre-compressed before put it into a mold to be compressed and folded to
24 form a burner. The width of the top stainless steel plate **1** is two tooth length
25 wider than the width of the bottom stainless steel plate **3** and the teeth **11** of

1 the top plate **1** are align with the teeth **31** of the bottom plate **3** before
2 compressed and folded. The saw-teeth **11** of top stainless steel plate **1** are
3 folded through compressing mold to wrap the saw-teeth **31** of the bottom
4 stainless steel plate **3** and bind these two parts together.

5 The vales **12** of the top stainless steel plate **1** are align with the vales **32**
6 of the bottom stainless steel plate **3** and they become the ports **5** of the burner
7 after folding the saw-teeth **11** of the top plate **1** and wrapping the saw-teeth **31**
8 of the bottom plate **3**. Because the teeth **31** of the bottom stainless steel plate
9 **3** are bended vertically from a plate therefore a small radius existed at the
10 corner of vales **32** that make space to form the port. The size of the ports **5**
11 can be adjusted either by changing the size of the vales **32** of the bottom plate
12 or changing the depth of the valves **32** of the bottom plate. The ports **5**
13 beneath the top plate **1** are one tooth length inward from the edge of the top
14 plate **1** that will prevent the grease getting into the ports **5**.

15 Referring to Fig. 5, 6 and 7 two divider plates **2** having some erect panels
16 **21** with different size and location to divert mixed gas to both side of the
17 burner and also to prevent the gas go to the end of the burner directly are set
18 between the top plate **1** and bottom plate **3**. There are three erect panels **22**,
19 **23** which are parallel and vertical to the direction of the gas flow to keep
20 constant distance between the two divider plates **2** enclosed by the top and
21 bottom plates **1**, **3**.

22 The small holes **33** and bracket **34** beneath the holes **33** on the bottom
23 plate **3** are for cross fire from one side of the burner to the other side of the
24 burner.

25 The venturi tube shape **6** behind the entrance of the burner is to facilitate
26 the air entering and mixing with the gas. A round cap **4** on the entrance

1 binds the two plates and forms a circular hole to allow the nozzle of the gas
2 valve set inside of it. An open entrance 7 between the cap and the venturi
3 tube allows the air sucked into the burner by injected high velocity gas. The
4 sucked air will be mixed with the gas through venturi tube 6 and the erects
5 parts **21** of the dividers. The mixed gas will be burned at the ports of the
6 burner evenly and completely.

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